

WHAT IS CLAIMED IS:

1. A carbonization plant comprising a heating furnace, a rotary furnace body supported in the heating furnace to be freely rotatable, a rotary drive means for rotating the rotary furnace body, and a vibration means for vibrating said rotary furnace body.

2. A carbonization plant comprising a heating furnace, a rotary furnace body supported in the heating furnace to be freely rotatable, a rotary drive means for rotating the rotary furnace body, a scratch-up means provided at an inner face side of said rotary furnace body for scratching up a charged material in the rotary furnace body by rotation of said rotary furnace body, and a vibration means for vibrating said rotary furnace body.

3. The carbonization plant according to Claim 2, wherein said heating furnace is supported to be freely tiltable and further comprising a tilt drive means for tilting the heating furnace and said rotary furnace body together.

4. The carbonization plant according to Claim 3, wherein said tilt drive means is constructed so that the rotary furnace body is inclinable together with said heating furnace depending on the charged amount of said charged material.

5. The carbonization plant according to Claim 2,

wherein said vibration means comprises one or a plurality of chain-like members, at least one end thereof being fixed on the inner face side of said rotary furnace body.

6. The carbonization plant according to Claim 5, wherein said chain-like members is disposed with a given interval in a direction of rotation of said rotary furnace body,

the one chain-like member of said chain-like members disposed in adjoining relation to one another being supported at one end thereof, and

the other chain-like member of the chain-like members disposed in adjoining relation to one another being supported at both ends thereof.

7. The carbonization plant according to Claim 2, wherein said scratch-up means comprises one or a plurality of scratch-up members having a scratch-up part elongating along a shaft center (C) of said rotary furnace body and a crossing part connected to the scratch-up part and elongating in a direction crossing the shaft center (C) of said rotary furnace body with a given tilt angle (α),

said crossing part being disposed close to an opening port provided at one end of said rotary furnace body.

8. The carbonization plant according to Claim 2, wherein said rotary furnace body is formed into a round cylinder.

9. The carbonization plant according to Claim 2, wherein a gas feed pipe elongating along the shaft center (C) of the rotary furnace body is connected at one end of said rotary furnace body for feeding an inert gas, and

wherein one end of an exhaust pipe elongating along the shaft center (C) of the rotary furnace body is connected to the other end of said rotary furnace body for discharging an exhaust gas generated in the rotary furnace body.

10. The carbonization plant according to Claim 9 further comprising a deodorizing device connected at the other end of said exhaust pipe for deodorizing said exhaust gas.

11. The carbonization plant according to Claim 10, wherein said deodorizing device is connected at the other end of said exhaust pipe through a refrigerator for cooling said exhaust gas.

12. The carbonization plant according to Claim 10, wherein said deodorizing device comprises a heating means, a washing mechanism with water for washing said exhaust gas heated with the heating means, and drainage retrieval means for retrieving the drainage issued by washing with water.

13. The carbonization plant according to Claim 2, wherein said charged material comprises waste tire chips formed by pulverizing the waste tire, and/or carbonized

chips formed by heating the waste tire chips.

14. A carbonization process using the carbonization plant according to Claim 1 comprising a heating step for heating charged material in the rotary furnace body by rotating the rotary furnace body in the heating furnace, said rotary furnace body being vibrated with a vibration means in the heating step.

15. The carbonization process using the carbonization plant according to Claim 2 comprising a heating step for heating charged material in the rotary furnace body by rotating the rotary furnace body in the heating furnace, said charged material being scratched up by a scratch-up means and said rotary furnace body being vibrated with a vibration means in the heating step.

16. The carbonization process according to Claim 15 further comprising a step for immersing said charging material in an alkali metal carbonate solution before being charged in said rotary furnace body,

said charged material immersed in said alkali metal carbonate solution being heated by mixing with an alkali metal hydroxide in said rotary furnace body in said heating step, and

said alkali metal carbonate solution being a drainage retrieved after washing an exhaust gas generated in said heating step with water.

17. The carbonization process according to Claim 15, wherein a carbonized product is formed by heating said charged material in said rotary furnace body in said heating step, and the carbonized product is converted into activated carbon by mixing with the alkali metal hydroxide with heating.

18. The carbonization process according to Claim 15, wherein said charged material comprises the waste tire chips obtained by pulverizing the waste tire, and/or the carbonized chips obtained by heating the waste tire chips.